

Claims

- [c1] An in-vivo information extracting system comprising:
a tag device which extracts in-vivo information in a living body; and
a relay device which is installed outside the living body and near the tag device embedded in the living body, wherein the tag device comprises power generating means for generating internal operating power from an electromagnetic wave fed from outside the tag device, and
the relay device comprises transceiver means for receiving, from the tag device, the in-vivo information extracted by the tag device and transmitting the received in-vivo information to outside the relay device.
- [c2] An in-vivo information extracting system comprising:
a tag device used in a living body, a relay device which is installed outside the living body and near the tag device placed in the living body, and a main transceiver which exchanges signals with the relay device, wherein the tag device comprises:
tag reception means for receiving an electromagnetic wave fed from outside the tag device,

power generating means for generating internal operating power from the electromagnetic wave received by the tag reception means,
in-vivo information extracting means for measuring an environment within the living body and outputting measured data, and
tag transmission means for transmitting the measured data outputted by the in-vivo information extracting means to the relay device; and
wherein the relay device comprises:
relay reception means for receiving the measured data transmitted by the tag device, and
relay transmission means for transmitting the measured data received by the relay reception means to the main transceiver.

[c3] The in-vivo information extracting system according to claim 2,
the relay device comprises a power supply which is a source of the operating power for the relay reception means and the relay transmission means.

[c4] The in-vivo information extracting system according to claim 3,
the relay device comprises second relay transmission means for generating and transmitting the electromagnetic wave to the tag device.

- [c5] The in-vivo information extracting system according to claim 2,
the relay device comprises data accumulating means for accumulating the measured data.
- [c6] The in-vivo information extracting system according to claim 5,
the relay transmission means comprises means for transmitting the measured data accumulated in the data accumulating means to outside the relay device in response to a request signal supplied from outside the relay device.
- [c7] The in-vivo information extracting system according to claim 5,
the relay transmission means comprises means for retransmitting the measured data accumulated in the data accumulating means to the main transceiver if no acknowledgement signal is returned when the measured data is transmitted to the main transceiver.
- [c8] The in-vivo information extracting system according to claim 2,
the tag device comprises data accumulating means for accumulating the measured data outputted by the in-vivo information extracting means.

- [c9] The in-vivo information extracting system according to claim 8,
the tag transmission means comprises means for transmitting the measured data accumulated in the data accumulating means to the relay device in response to a request signal supplied from outside the tag device.
- [c10] The in-vivo information extracting system according to claim 8,
the tag transmission means comprises means for re-transmitting the measured data accumulated in the data accumulating means to the relay device if no acknowledge signal is returned when the measured data is transmitted to the relay device.
- [c11] The in-vivo information extracting system according to claim 2,
the tag reception means and the tag transmission means comprise a low-frequency coil antenna.
- [c12] The in-vivo information extracting system according to claim 2,
the tag reception means and the tag transmission means comprise a radio-frequency planar loop antenna.
- [c13] The in-vivo information extracting system according to claim 2,

the tag reception means and the tag transmission means use a container of the tag device as a radio-frequency antenna.

[c14] The in-vivo information extracting system according to claim 2,
the relay transmission means transmits control signals to the tag device;
the tag reception means receives the control signals transmitted by the relay transmission means; and
the tag device comprises control means for controlling the in-vivo information extracting means based on the control signals received by the tag reception means.

[c15] A tag device used for an in-vivo information extracting system which extracts in-vivo information using the tag device placed in a living body and transmits the in-vivo information via a relay device outside the body, the tag device comprises:
tag reception means for receiving an electromagnetic wave fed from outside; and
power generating means for generating internal operating power from the electromagnetic wave received by the tag reception means; and
tag transmission means for obtaining and transmitting measured data about an environment within the living body.

- [c16] The tag device according to claim 15, comprising:
in-vivo information extracting means for measuring the environment within the living body and outputting the measured data,
wherein the tag transmission means transmits the measured data outputted by the in-vivo information extracting means.
- [c17] The tag device according to claim 15, further comprising
:
data accumulating means for accumulating the measured data.
- [c18] The tag device according to claim 15,
the tag reception means and the tag transmission means comprise a low-frequency coil antenna.
- [c19] The tag device according to claim 15,
the tag reception means and the tag transmission means comprise a radio-frequency planar loop antenna.
- [c20] The tag device according to claim 15,
the tag reception means and the tag transmission means use a container of the tag device as a radio-frequency antenna.
- [c21] The tag device according to claim 16,

wherein the tag reception means receives control signals transmitted from outside;

and comprising : the tag device comprises control means for controlling the in-vivo information extracting means based on the control signals received by the tag reception means.

[c22] A relay device used for an in-vivo information extracting system which extracts in-vivo information using a tag device placed in a living body and transmits the in-vivo information via the relay device outside the body, characterized in that the relay device comprises:
relay reception means for receiving measured data about an environment within the living body extracted by the tag device; and
relay transmission means for transmitting the measured data received by the relay reception means.

[c23] The relay device according to claim 22, further comprising:
a power supply which is a source of operating power for the relay reception means and the relay transmission means.

[c24] The relay device according to claim 23, further comprising:
second relay transmission means for generating and

transmitting an electromagnetic wave in order for the tag device to generate its internal operating power.

[c25] The relay device according to claim 22, further comprising:
data accumulating means for accumulating the measured data.